

EXPLANATION OF PLATE XV.

- Fig. 1.* General view of the interior of *Pholas crispata*, the mantle being laid open along the ventral margin :—*a*, incurrent siphonal orifice, with a piece of whalebone passed through it to show the direction of the current ; *b*, excurrent siphonal orifice, with a piece of whalebone likewise passed through it into the anal chamber ; *c*, the gills, exhibiting the indigo collecting on their surfaces in minute streams and passing along their free margins ; *d*, anal chamber laid open, exhibiting the four rows of orifices leading into the tubes between the gill-laminae ; *e, e, e*, labial tentacles ; *f*, accumulation of indigo on them, brought by the gills ; *g*, oral orifice ; *h*, foot.
- Fig. 2.* Section of the gill-plate, showing three of the tubes between the laminae :—*a*, the tubes.
- Fig. 3.* A portion of the gill-laminae highly magnified, showing the orifices in the meshes.

XXXI.—*Notice of a Barytic Deposit in certain Testacea from the London Clay.* By N. T. WETHERELL, Esq., F.G.S., M.R.C.S.

DURING the examination of the Testacea of the London clay, I have observed in some univalves from a particular locality the occurrence of small concretionary bodies frequently filling the apertures and umbilici of the shells. These bodies are of an irregular form, but where they occur in the apertures of the *Natica*, especially *Natica glaucinoides*, they present at first sight somewhat the appearance of opercula*. In the other Testacea in which they occur, as some species of *Fusus*, *Pleurotoma* and *Cancellaria*, and a specimen of *Nautilus imperialis*, these bodies are more irregularly placed, and in a few instances they were found isolated in the clay surrounding the shells.

These bodies when broken have a fibro-radiate structure of an opaque white, and readily yield to the knife ; they are occasionally aggregated together, each one showing its centre of radiation. A slight effervescence was produced upon the application of muriatic acid, which ceased almost immediately without any apparent diminution of the size of the specimen.

A qualitative analysis kindly undertaken for me by Mr. James Field of Loughton, Essex, yielded the following substances :—

Silica, oxide of iron, alumina, carbonate of lime, sulphate of barytes.

Both oxide of iron and alumina were small in quantity, and there was a mere trace of silica, the sulphate of barytes forming by far the greater proportion of the concretions.

The specimens were obtained from the London clay, about two miles to the north of Highgate, at which place this formation lies under about 10 feet of diluvium or northern drift.

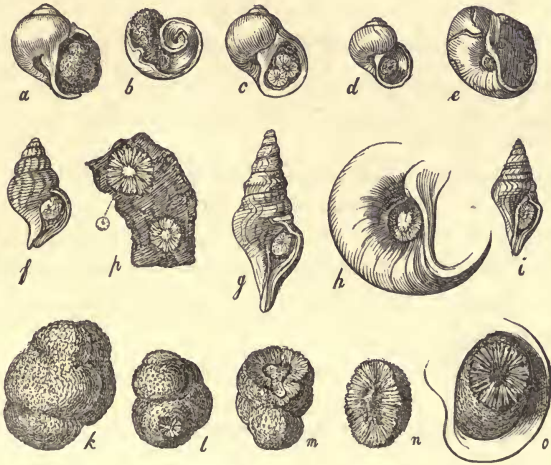
About three years since a small excavation was made through

* The barytic substance often fills up the umbilicus of the same species.

the drift bed into the London clay, the latter being penetrated to the depth of 8 or 9 feet; the shells being very abundantly disseminated throughout. Barytes is of rather rare occurrence in the London clay. In the list of the minerals of this formation given in the 'Outlines of the Geology of England and Wales,' it is not even mentioned.

Phillips, in his 'Introduction to Mineralogy,' states that the sulphate of barytes "occurs in crystals disposed in a radiated form on carbonate of lime, coating the divisions of the septaria, on the western side of the Isle of Sheppey."

In the numerous specimens of Testacea and other organic remains which I was so fortunate to obtain from the excavations in the London clay at Primrose Hill, and from the deep cuttings of the Great Northern Railway near Whetstone, I have not detected the trace of any similar barytic substance, and the occurrence of it in the locality previously mentioned may be probably due to the condition of the clay in its upper part at that spot, being more favourable to the decomposition and rearrangement of the chemical constituents of the matrix itself and of the contained organic bodies.



EXPLANATION OF THE FIGURES.

a, f, represent the deposit in an unbroken state within the apertures of a *Natica glaucinoides* and a *Fusus*; *b*, shows the space it generally occupies within the shell; *c*, the deposit broken, showing two centres of radiation; *d, g, i*, *Natica* and *Pleurotoma*, containing the deposit in a broken state, showing the fibro-radiate structure; *e, h*, umbilici of *Naticæ* filled with the deposit; *k, l, m, n, o*, magnified figures; *p*, magnified figure of the deposit in the clay. The natural size is represented in outline.